



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/610,683	07/02/2003	Shigemi Hirasawa	501.42899X00	2909

20457 7590 04/21/2005

ANTONELLI, TERRY, STOUT & KRAUS, LLP  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-3873

EXAMINER
----------

RIELLEY, ELIZABETH A

ART UNIT	PAPER NUMBER
----------	--------------

2879

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/610,683

Applicant(s)

HIRASAWA ET AL.

Examiner

Elizabeth A. Rielley

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. Amendment filed 7/29/03 has been entered and considered by the Examiner. The substitute specification, filed July 29,2003, has been entered. Currently, claims 1-12 are pending in the instant application.

### *Priority*

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "S" on page 4 line 5 of the Specification and "Sa" on page 4 line 20. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4-8, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori (US 5599749) in view of Uchiyama (US 6265770).
6. In regard to claim 1, Hattori ('749) teaches a display device (figure 29) comprising: a front substrate (66; column 21 line 40 to column 22 line 26) forming an anode (67) and phosphors (68) on an inner surface thereon; a back substrate (61) which forms a plurality of cathode lines (63) which extend in one direction and are juxtaposed in another direction which crosses the one direction and have electron sources (64), and a plurality of control electrodes (65) which cross the cathode lines in a non-contact manner within a display region, extend in the another direction, are juxtaposed in the one direction, and have electron passing apertures (figure 29) which allow electrons from the electron sources to pass there through to the front substrate side, on an inner surface thereof, the back substrate being arranged to face the front substrate in an opposed manner with a given distance there between; and distance holding members (70) being sandwiched between the front substrate (66) and the back substrate (61) in an erected manner and holding a distance between the front substrate and the back substrate at a given distance; wherein a buffering/fixing material (71) is provided between at least one of the front substrate and the back substrate and the distance holding members. Hattori ('749) does not specifically teach that the

buffering/fixing material is formed by mixing an adhesive to a highly resilient material that dissipates in a baking step. Uchiyama ('770) teaches the use of a buffering/fixing material in a PDP that is formed by mixing an adhesive to a highly resilient material that dissipates in a baking step (column 7 lines 5-26) in order to form a stronger bond. Thus, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the display device of Hattori ('749) with the bonding material of Uchiyama ('770) in order to produce a stronger bond with in the display device.

7. In regard to claims 2 and 8, Hattori ('749) teaches control electrodes (21) are constituted of plate-members which are formed by arranging a plurality of strip-like electrode elements in parallel (figures 7 and 8; column 11 lines 34-39).

8. In regards to claims 4 and 5, Uchiyama ('770) teaches that the highly resilient material is a low temperature decomposing foamed resin that is urethane (column 7 lines 5-26). The Examiner notes that Uchiyama ('770) states the material could be a polyimide resin. However, polyurethane is a common polyimide resin. Motivation for combining is the same as above.

9. In regard to claims 6 and 12, Hattori ('749) teaches low melting-point glass is used as the adhesive (column 21 line 40 to column 22 line 26).

10. In regard to claim 7, Hattori ('749) teaches a display device (figure 29) comprising: a front substrate (66; column 21 line 40 to column 22 line 26) forming an anode (67) and phosphors (68) on an inner surface thereon; a back substrate (61) which forms a plurality of cathode lines (63) which extend in one direction and are juxtaposed in another direction which crosses the one direction and have electron sources (64), and a plurality of control electrodes (65) which cross the cathode lines in a non-contact

manner within a display region, extend in the another direction, are juxtaposed in the one direction, and have electron passing apertures (figure 29) which allow electrons from the electron sources to pass there through to the front substrate side, on an inner surface thereof, the back substrate being arranged to face the front substrate in an opposed manner with a given distance there between; and distance holding members (70) being sandwiched between the front substrate (66) and the back substrate (61) in an erected manner and holding a distance between the front substrate and the back substrate at a given distance; wherein a buffering/fixing material (71) is provided between at least one of the front substrate and the back substrate and the distance holding members. Hattori ('749) does not specifically teach the buffering/fixing material is formed by mixing an adhesive to a highly resilient material that is present after a baking step. Uchiyama ('770) teaches the buffering/fixing material is formed by mixing an adhesive to a highly resilient material that is present after a baking step (column 7 lines 5-26) in order to form a stronger bond. Thus, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the display device of Hattori ('749) with the bonding material of Uchiyama ('770) in order to produce a stronger bond with in the display device.

11. In regard to claims 10 and 11, Uchiyama ('770) teaches that the resilient material is heat-resistant, aramid-based fibers (column 7 lines 5-26). Motivation for combining is the same as above.

12. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori (US 5599749) in view of Uchiyama (US 6265770) as applied to claims 1 and 7 above, and further in view of Takenaka (US 20020036460).

13. Hattori/Uchiyama teach all the limitations set forth, as described above, except an outer frame which is interposed between the front substrate and the back substrate such that the outer frame surrounds

Art Unit: 2879

the display region to hold the given distance, and the display device further includes electrode pressing members which fix both end regions of the strip-like electrode elements which constitute the control electrodes to the back substrate outside the display region and the inside the outer frame. Takenaka ('460) teaches an outer frame (figure 2; 14; paragraphs 81-85) for a display which is interposed between the front substrate (10) and the back substrate (12) such that the outer frame surrounds the display region to hold the given distance, and the display device further includes electrode pressing members (30a) which fix both end regions of the strip-like electrode elements (24) which constitute the control electrodes to the back substrate outside the display region and the inside the outer frame (see figures 2 and 14) in order to create a high structural strength for the display (paragraph 61). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to modify the display of Hattori/Uchiyama with the outer frame and electrode pressing members of Takenaka ('460) in order to create a high structural strength for the display.

### *Conclusion*

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Elizabeth Rielley

Examiner  
Art Unit 2879

Wszgo 4/18/05  
Mariceli Santiago  
AU 2879